

Title (en)
Gas sensor

Title (de)
Gassensor

Title (fr)
Capteur de gaz

Publication
EP 1037041 B1 20090429 (EN)

Application
EP 00301955 A 20000309

Priority
JP 6699499 A 19990312

Abstract (en)
[origin: EP1037041A2] A gas sensor comprising a proton-conductive layer 5 formed of a polymer electrolyte; first and second electrodes 3 and 4 disposed in contact with the proton-conductive layer 5 and having a function of dissociating hydrogen; a gas-diffusion-rate limiting layer 2 disposed between a measurement gas atmosphere and the first electrode 3 and adapted to diffuse the gas under measurement to the first electrode 3 in a diffusion-rate limited state; and a dense support 1 supporting these elements. Hydrogen gas having reached the first electrode 3 via the gas-diffusion-rate limiting layer 2 is dissociated into protons by virtue of the catalytic action of Pt contained in the electrode and the voltage applied to the first electrode 3, and the generated protons are pumped to the second electrode 4 via the proton-conductive layer 5 and are converted to hydrogen gas, which diffuses into the measurement gas atmosphere. When the applied voltage is sufficiently high, saturation current flows between the first and second electrodes 3 and 4, and the magnitude of the saturation current varies in proportion to the hydrogen gas concentration of the gas under measurement. A hydrogen gas sensor which operates at low temperature in a hydrogen-rich atmosphere, and can accurately measure hydrogen gas concentration of a fuel gas of a fuel cell, is thereby provided. <IMAGE>

IPC 8 full level
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CPC (source: EP US)
G01N 27/4074 (2013.01 - EP US); **G01N 33/005** (2013.01 - EP US)

Citation (examination)
JP H08327592 A 19961213 - TOYOTA CENTRAL RES & DEV

Cited by
EP1260814A3; EP1103807A3; US7422646B2; EP1249701A3; EP1542304A3; EP1288655A3; US7306712B2; US6953630B2; US6979504B2; US7276141B2; US7189364B2; US6887606B2; US7666533B2; US6913847B2; WO2021094282A1; US6969561B2; US6815101B2

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